



Exceptional Dispatch Report

Table 1: November 2017

TABLE OF CONTENTS

Introduction	3
The Nature of Exceptional Dispatch.....	3
Appendix A: Explanation by Example	15
Example 1: Exceptional Dispatch Instructions Prior to DAM	15
Example 2: Incremental Exceptional Dispatch Instructions in RTM.....	16
Example 3: Decremental Exceptional Dispatch Instructions in RTM.....	18

LIST OF TABLES AND FIGURES

Table 1: Exceptional Dispatches in November 2017.....	5
Table 2: Instructions Prior to Day-Ahead Market	15
Table 3: FERC Summary of Instructions Prior to DAM	16
Table 4: Incremental Exceptional Dispatch Instructions in RTM	16
Table 5: FERC Summary of ED Instructions in RTM.....	17
Table 6: Decremental Exceptional Dispatch Instructions in RTM	18
Table 7: FERC Summary of Decremental ED Instructions in RTM.....	18

Introduction

This report is filed pursuant to FERC's September 2, 2009 and July 4, 2010 orders in ER08-1178. These orders require two monthly Exceptional Dispatch reports—one issued on the 15th of each month and one issued on the 30th of each month. This report provides data on the frequency and reasons for Exceptional Dispatches issued in November 2017.

The Nature of Exceptional Dispatch

The CAISO can issue exceptional dispatch instructions for a resource as a pre-day-ahead unit commitment, which may also include an indicative exceptional dispatch energy schedule, a post-day-ahead unit commitment, or a real-time exceptional dispatch.¹ A pre-day-ahead commitment is an exceptional dispatch instruction that commits a resource at or above its physical minimum operating level in the day-ahead market. A post-day-ahead market commitment is an exceptional dispatch instruction that commits a resource at or above its physical minimum operating level in the real-time market. A real-time exceptional dispatch instruction is a dispatch of a resource at or above its physical minimum operating point. A real-time exceptional dispatch above the resource day-ahead award is an incremental exceptional dispatch instruction and an exceptional dispatch below the day-ahead award is a decremental dispatch instruction.

The CAISO issues exceptional dispatch instructions to maintain the reliability of the grid when the market software cannot do so. Whenever the CAISO issues an exceptional dispatch instruction, the operator logs the dispatch and the associated reason.

Many of the exceptional dispatches listed below in Table 1, were to satisfy either a local area or system reliability requirements, and are classified into local generation requirements, transmission management requirements, non-modeled transmission outages or other non-modeled constraints or requirements and intertie emergency assistance. All of the transmission procedures are available on the CAISO website.²

The following reason for exceptional dispatch instructions in November 2017 was not related to generation or transmission operating procedures: Software Limitation, when an exceptional dispatch instruction was used to bridge schedules across days for resources with a minimum down time of 24 hours, as the CAISO software does not handle multi day commitment. For instance, a resource has a day-ahead schedule from 0600 till 2300, and then is shut down in 2400. If this resource had a minimum down time of 24 hours and it is required the

¹ The CAISO can issue exceptional dispatch instructions subject to authority of the CAISO Tariff Section 34.11 and in accordance with CAISO Operating Procedure 2330 (formerly M-402).

² A list of all of the CAISO's publicly available Operating Procedures are available at the following link: <http://www.caiso.com/thegrid/operations/opsdoc/index.html>

following day, then the CAISO issues an exceptional dispatch to commit this resource in 2400 so it can be dispatched economically in the following day. Software limitation reason was also used for exceptional dispatches to manually issue shut down instructions to a resource because of a temporary Automatic Dispatch System (“ADS”) failure, or similar issues. There were a few other reasons used to explain exceptional dispatch instructions in November 2017, which are self explanatory.

The data in Table 1 is based on a template specified in the September 2009 order.³ Each entry in Attachment A is a summary of exceptional dispatches classified by (1) the reason for the exceptional dispatch; (2) the location of the resource by Participating Transmission Owner (“PTO”) service area; (3) the Local Reliability Area (“LRA”) where applicable; (4) the market in which the exceptional dispatch occurred (day-ahead vs. real-time); and (5) the date of the exceptional dispatch. For each classification the following information is provided: (1) Megawatts (MW); (2) Commitment (3) Inc or Dec (4) Hours; (5) Begin Time; and (6) End Time.

The MW column shows the range of exceptional dispatch instructions in MW for the classification. The Commitment column specifies if there was a unit commitment for the classification. The INC/DEC column specifies if there was an incremental dispatch or a decremental dispatch from the IFM schedule. The Begin Time column shows the start of exceptional dispatch for the classification and the End Time column shows the end of exceptional dispatch for the classification. The column Hours is the difference between end time and begin time rounded up to the next hour. The data shown is further explained by way of example in Attachment A.

Table 1 indicates there were 220 exceptional dispatches in November 2017, as compared to 335 exceptional dispatches in October 2017. Exceptional dispatches issued for the following reasons accounted for approximately 52 percent of the total exceptional dispatches during the reporting period: planned transmission outages, software limitations, and operating procedure number 7110 (along with 6510). Many of the exceptional dispatches with the reason “Other Reliability Requirement” were due to Real Time Contingency Analysis.

³ The data in Table 1 is principally SLIC information supplemented with data from the Market Quality System (MQS). It is the most accurate currently available and it is worth noting that this data has been through the T+38B initial statement process wherein many unresolved issues are fixed. The CAISO believes that this data will correlate well with the settlements data that will be available when the CAISO files the Table 2 report for the reporting period.

Table 1: Exceptional Dispatches in November 2017

**California Independent System Operator Corporation
Exceptional Dispatch Report
January 15, 2018**

Chart 1: Table of Exceptional Dispatches for Period 01/November/2017 - 30/November/2017

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
1	RT	Conditions beyond the control of the CAISO	SCE	Big Creek-Ventura	11/11/2017	118	No	INC	6	9:00	14:59
2	RT	Conditions beyond the control of the CAISO	SCE	LA Basin	11/1/2017	274-366	No	INC	3	8:05	10:59
3	RT	Contingency Dispatch	Intertie	N/A	11/5/2017	32	No	INC	1	23:00	23:59
4	RT	Contingency Dispatch	SCE	Big Creek-Ventura	11/7/2017	119-238	No	INC	2	17:30	18:59
5	RT	Contingency Dispatch	SCE	LA Basin	11/7/2017	180	No	INC	3	17:30	19:59
6	RT	Fast Start Unit Management	PG&E	Bay Area	11/21/2017	0	No	INC	2	4:30	5:34
7	RT	Fast Start Unit Management	SCE	LA Basin	11/2/2017	0	No	INC	3	20:00	22:34
8	RT	Fast Start Unit Management	SCE	LA Basin	11/6/2017	0	No	INC	2	0:30	2:04
9	RT	Fast Start Unit Management	SCE	LA Basin	11/7/2017	0	No	INC	21	1:30	22:04
10	RT	Fast Start Unit Management	SCE	LA Basin	11/8/2017	0	No	INC	1	20:00	20:29
11	RT	Fast Start Unit Management	SCE	LA Basin	11/17/2017	0	No	INC	2	0:00	1:04
12	RT	Fast Start Unit Management	SCE	LA Basin	11/29/2017	0	No	INC	2	12:55	13:59
13	RT	Fast Start Unit Management	SDG&E	San Diego-IV	11/7/2017	0	No	DEC	1	19:45	20:44
14	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	11/24/2017	6- 16	No	DEC	8	16:30	23:59
15	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	11/25/2017	10	No	DEC	7	0:00	6:44
16	RT	Incomplete or Inaccurate Transmission	PG&E	N/A	11/30/2017	15- 25	No	DEC	4	16:44	19:59
17	RT	Load Forecast Uncertainty	Intertie	N/A	11/11/2017	23	No	INC	1	16:00	16:59
18	RT	Load Forecast Uncertainty	N/A	N/A	11/7/2017	0	No	INC	2	17:35	19:34

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
19	RT	Load Forecast Uncertainty	PG&E	Bay Area	11/5/2017	240	No	INC	1	22:49	23:39
20	RT	Load Forecast Uncertainty	PG&E	Bay Area	11/6/2017	180	No	DEC	16	6:00	21:59
21	RT	Load Forecast Uncertainty	PG&E	Bay Area	11/6/2017	180-400	No	INC	16	6:00	21:59
22	RT	Load Forecast Uncertainty	PG&E	Bay Area	11/7/2017	370-740	No	DEC	2	17:35	19:34
23	RT	Load Forecast Uncertainty	PG&E	Bay Area	11/7/2017	4- 9	No	INC	2	17:35	19:34
24	RT	Load Forecast Uncertainty	PG&E	Bay Area	11/13/2017	180-543	No	INC	13	11:00	23:59
25	RT	Load Forecast Uncertainty	PG&E	Bay Area	11/23/2017	175	No	INC	6	16:30	21:59
26	RT	Load Forecast Uncertainty	PG&E	Fresno	11/7/2017	90- 180	No	DEC	2	17:16	18:59
27	RT	Load Forecast Uncertainty	PG&E	Fresno	11/7/2017	90- 270	No	INC	3	17:16	19:59
28	RT	Load Forecast Uncertainty	PG&E	Fresno	11/15/2017	83	No	INC	1	23:15	23:59
29	RT	Load Forecast Uncertainty	PG&E	Humboldt	11/22/2017	28	No	INC	1	7:25	7:34
30	RT	Load Forecast Uncertainty	PG&E	N/A	11/1/2017	47	No	DEC	14	8:50	21:59
31	RT	Load Forecast Uncertainty	PG&E	N/A	11/1/2017	182	No	INC	2	9:05	10:29
32	RT	Load Forecast Uncertainty	PG&E	Sierra	11/7/2017	64- 128	No	INC	2	17:35	19:34
33	RT	Load Forecast Uncertainty	PG&E	Stockton	11/7/2017	4- 8	No	INC	2	17:35	19:34
34	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	11/7/2017	3	No	INC	2	17:35	19:34
35	RT	Load Forecast Uncertainty	SCE	Big Creek-Ventura	11/13/2017	140	No	INC	7	12:00	18:59
36	RT	Load Forecast Uncertainty	SCE	LA Basin	11/5/2017	45- 232	No	INC	1	22:49	23:50
37	RT	Load Forecast Uncertainty	SCE	LA Basin	11/6/2017	194	No	DEC	7	14:50	20:59
38	RT	Load Forecast Uncertainty	SCE	LA Basin	11/6/2017	194	No	INC	7	14:50	20:59
39	RT	Load Forecast Uncertainty	SCE	LA Basin	11/7/2017	388	No	DEC	8	12:05	19:59
40	RT	Load Forecast Uncertainty	SCE	LA Basin	11/7/2017	388-899	No	INC	8	12:05	19:59
41	RT	Load Forecast Uncertainty	SCE	LA Basin	11/8/2017	20- 30	No	INC	17	7:00	23:59
42	RT	Load Forecast Uncertainty	SCE	LA Basin	11/13/2017	25- 50	No	INC	12	12:00	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
43	RT	Load Forecast Uncertainty	SCE	LA Basin	11/22/2017	20- 55	Yes	INC	12	12:00	23:59
44	RT	Load Forecast Uncertainty	SCE	N/A	11/7/2017	49- 99	No	INC	2	17:35	19:34
45	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/3/2017	63	No	INC	3	18:00	20:59
46	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/8/2017	68	No	DEC	6	15:15	20:59
47	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/8/2017	20- 88	No	INC	13	11:00	23:59
48	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/9/2017	20	No	INC	12	12:00	23:59
49	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/13/2017	20	No	INC	18	6:00	23:59
50	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/14/2017	20- 136	No	INC	12	10:00	21:59
51	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/15/2017	20- 83	No	INC	19	5:00	23:59
52	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/16/2017	20- 40	No	INC	17	5:00	21:59
53	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/17/2017	20	No	INC	16	4:00	19:59
54	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/21/2017	20	No	INC	9	15:00	23:59
55	RT	Load Forecast Uncertainty	SDG&E	San Diego-IV	11/22/2017	20- 126	No	INC	22	0:00	21:59
56	RT	Load Pull	SCE	LA Basin	11/2/2017	194	No	DEC	5	16:30	20:59
57	RT	Load Pull	SCE	LA Basin	11/2/2017	194	No	INC	5	16:30	20:59
58	RT	Load Pull	SCE	LA Basin	11/3/2017	194	No	DEC	3	17:20	19:59
59	RT	Load Pull	SCE	LA Basin	11/4/2017	194	No	DEC	4	16:00	19:59
60	RT	Load Pull	SCE	LA Basin	11/4/2017	194	No	INC	4	16:00	19:59
61	RT	Load Pull	SCE	LA Basin	11/5/2017	194	No	DEC	5	15:25	19:59
62	RT	Load Pull	SCE	LA Basin	11/5/2017	194	No	INC	5	15:25	19:59
63	RT	Load Pull	SCE	LA Basin	11/14/2017	190	No	DEC	6	15:40	20:59
64	RT	Load Pull	SCE	LA Basin	11/14/2017	190	No	INC	6	15:40	20:59
65	RT	Load Pull	SDG&E	San Diego-IV	11/14/2017	68	No	INC	1	15:45	16:14
66	RT	Operating Procedure Number and Constraint (6510)	SDG&E	San Diego-IV	11/18/2017	20- 68	No	INC	16	4:00	19:59
67	RT	Operating Procedure Number and Constraint (7110)	PG&E	Fresno	11/27/2017	48	No	INC	1	20:45	21:29
68	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/14/2017	47- 48	No	INC	1	23:00	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
69	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/15/2017	48- 60	No	INC	16	0:00	15:14
70	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/17/2017	14- 15	No	DEC	9	15:00	23:59
71	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/17/2017	14	No	INC	6	18:05	23:59
72	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/20/2017	15	No	DEC	4	20:45	23:59
73	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/20/2017	15- 32	No	INC	16	8:40	23:59
74	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/22/2017	14- 28	No	DEC	17	7:35	23:59
75	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/22/2017	28- 30	No	INC	16	7:35	22:59
76	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/23/2017	14	No	DEC	1	0:00	0:44
77	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/23/2017	14	No	INC	14	8:15	21:59
78	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/24/2017	29- 42	No	INC	15	9:15	23:59
79	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/25/2017	16- 32	No	DEC	8	0:00	7:59
80	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/25/2017	16	No	INC	3	21:00	23:59
81	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/26/2017	30	No	DEC	8	13:15	20:29
82	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/26/2017	16- 60	No	INC	24	0:00	23:59
83	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/27/2017	14	No	DEC	12	8:25	19:59
84	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/27/2017	14- 80	No	INC	24	0:00	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
85	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/28/2017	16- 32	No	INC	9	0:00	8:44
86	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/29/2017	14- 70	No	DEC	19	5:30	23:59
87	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/29/2017	42- 84	No	INC	19	5:30	23:59
88	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/30/2017	28- 32	No	DEC	6	2:25	7:59
89	RT	Operating Procedure Number and Constraint (7110)	PG&E	Humboldt	11/30/2017	28- 60	No	INC	8	0:00	7:59
90	RT	Other Reliability Requirement	PG&E	N/A	11/23/2017	16	No	DEC	3	17:05	19:59
91	RT	Other Reliability Requirement	PG&E	N/A	11/25/2017	10- 30	No	DEC	17	7:30	23:59
92	RT	Other Reliability Requirement	PG&E	N/A	11/25/2017	25- 30	No	INC	9	7:30	15:59
93	RT	Other Reliability Requirement	PG&E	N/A	11/26/2017	6- 25	No	DEC	24	0:00	23:59
94	RT	Other Reliability Requirement	PG&E	N/A	11/27/2017	25- 30	No	DEC	6	0:00	5:59
95	RT	Other Reliability Requirement	PG&E	N/A	11/29/2017	0	No	DEC	8	16:18	23:59
96	RT	Other Reliability Requirement	PG&E	N/A	11/29/2017	0	No	INC	8	16:18	23:59
97	RT	Other Reliability Requirement	PG&E	N/A	11/30/2017	20	No	INC	2	0:00	1:59
98	RT	Other Reliability Requirement	SCE	LA Basin	11/28/2017	65	No	INC	6	9:15	14:59
99	RT	Other Reliability Requirement	SDG&E	San Diego-IV	11/21/2017	68	No	INC	4	16:30	19:59
100	RT	Planned Transmission Outage	Intertie	N/A	11/1/2017	800	No	INC	2	10:05	11:59
101	RT	Planned Transmission Outage	Intertie	N/A	11/10/2017	800	No	INC	1	12:00	12:59
102	RT	Planned Transmission Outage	Intertie	N/A	11/10/2017	800	No	INC	1	11:00	11:59
103	RT	Planned Transmission Outage	PG&E	Bay Area	11/1/2017	54	No	INC	1	11:00	11:59
104	RT	Planned Transmission Outage	PG&E	Bay Area	11/2/2017	54- 60	No	INC	11	9:30	19:59
105	RT	Planned Transmission Outage	PG&E	Bay Area	11/3/2017	54	No	INC	12	7:45	18:59
106	RT	Planned Transmission Outage	PG&E	Bay Area	11/4/2017	54- 128	No	INC	13	5:55	17:59
107	RT	Planned Transmission Outage	PG&E	Bay Area	11/6/2017	175- 363	No	INC	10	4:30	13:59
108	RT	Planned Transmission Outage	PG&E	Bay Area	11/10/2017	54	No	INC	5	12:45	17:29

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
109	RT	Planned Transmission Outage	PG&E	Bay Area	11/14/2017	54	No	INC	5	8:00	12:59
110	RT	Planned Transmission Outage	PG&E	Bay Area	11/15/2017	54	No	INC	6	8:00	13:59
111	RT	Planned Transmission Outage	PG&E	Bay Area	11/16/2017	54	No	INC	13	8:00	20:59
112	RT	Planned Transmission Outage	PG&E	Humboldt	11/1/2017	16- 42	No	DEC	24	0:40	23:59
113	RT	Planned Transmission Outage	PG&E	Humboldt	11/1/2017	16- 48	No	INC	24	0:00	23:59
114	RT	Planned Transmission Outage	PG&E	Humboldt	11/2/2017	16- 64	No	DEC	24	0:00	23:59
115	RT	Planned Transmission Outage	PG&E	Humboldt	11/2/2017	16- 58	No	INC	24	0:00	23:59
116	RT	Planned Transmission Outage	PG&E	Humboldt	11/3/2017	16- 76	No	DEC	24	0:00	23:59
117	RT	Planned Transmission Outage	PG&E	Humboldt	11/3/2017	16- 76	No	INC	24	0:00	23:59
118	RT	Planned Transmission Outage	PG&E	Humboldt	11/4/2017	16- 28	No	DEC	24	0:00	23:59
119	RT	Planned Transmission Outage	PG&E	Humboldt	11/4/2017	28- 70	No	INC	24	0:00	23:59
120	RT	Planned Transmission Outage	PG&E	Humboldt	11/5/2017	28- 56	No	INC	4	0:00	3:59
121	RT	Planned Transmission Outage	PG&E	Humboldt	11/5/2017	14- 28	No	DEC	24	0:00	23:59
122	RT	Planned Transmission Outage	PG&E	Humboldt	11/5/2017	14- 70	No	INC	24	0:00	23:59
123	RT	Planned Transmission Outage	PG&E	Humboldt	11/6/2017	15- 32	No	DEC	23	0:00	22:14
124	RT	Planned Transmission Outage	PG&E	Humboldt	11/6/2017	28- 80	No	INC	24	0:00	23:59
125	RT	Planned Transmission Outage	PG&E	Humboldt	11/7/2017	32	No	DEC	13	7:40	19:59
126	RT	Planned Transmission Outage	PG&E	Humboldt	11/7/2017	30- 80	No	INC	24	0:00	23:59
127	RT	Planned Transmission Outage	PG&E	Humboldt	11/8/2017	15- 80	No	DEC	20	4:10	23:59
128	RT	Planned Transmission Outage	PG&E	Humboldt	11/8/2017	14- 64	No	INC	24	0:00	23:59
129	RT	Planned Transmission Outage	PG&E	Humboldt	11/9/2017	16- 76	No	DEC	24	0:00	23:59
130	RT	Planned Transmission Outage	PG&E	Humboldt	11/9/2017	14- 70	No	INC	24	0:00	23:59
131	RT	Planned Transmission Outage	PG&E	Humboldt	11/10/2017	14- 60	No	DEC	21	3:20	23:59
132	RT	Planned Transmission Outage	PG&E	Humboldt	11/10/2017	28- 60	No	INC	24	0:00	23:59
133	RT	Planned Transmission Outage	PG&E	Humboldt	11/11/2017	15- 48	No	DEC	23	1:05	23:59
134	RT	Planned Transmission Outage	PG&E	Humboldt	11/11/2017	28- 32	No	INC	24	0:00	23:59
135	RT	Planned Transmission Outage	PG&E	Humboldt	11/12/2017	14- 42	No	DEC	24	0:00	23:59
136	RT	Planned Transmission Outage	PG&E	Humboldt	11/12/2017	28- 32	No	INC	24	0:00	23:59
137	RT	Planned Transmission Outage	PG&E	Humboldt	11/13/2017	14- 60	No	DEC	23	0:00	22:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
138	RT	Planned Transmission Outage	PG&E	Humboldt	11/13/2017	28- 62	No	INC	24	0:00	23:59
139	RT	Planned Transmission Outage	PG&E	Humboldt	11/14/2017	28- 32	No	DEC	14	1:00	14:59
140	RT	Planned Transmission Outage	PG&E	Humboldt	11/14/2017	16- 64	No	INC	16	0:00	15:59
141	RT	Planned Transmission Outage	PG&E	Humboldt	11/15/2017	90	No	DEC	4	18:00	21:29
142	RT	Planned Transmission Outage	PG&E	Humboldt	11/15/2017	62- 90	No	INC	6	18:00	23:59
143	RT	Planned Transmission Outage	PG&E	Humboldt	11/16/2017	16- 57	No	DEC	24	0:05	23:59
144	RT	Planned Transmission Outage	PG&E	Humboldt	11/16/2017	16- 114	No	INC	24	0:00	23:59
145	RT	Planned Transmission Outage	PG&E	Humboldt	11/17/2017	14- 15	No	DEC	15	1:20	15:29
146	RT	Planned Transmission Outage	PG&E	Humboldt	11/17/2017	42- 61	No	INC	15	0:00	14:59
147	RT	Planned Transmission Outage	PG&E	Humboldt	11/28/2017	28- 84	No	DEC	16	8:45	23:59
148	RT	Planned Transmission Outage	PG&E	Humboldt	11/28/2017	42- 84	No	INC	16	8:45	23:59
149	RT	Planned Transmission Outage	PG&E	Humboldt	11/29/2017	42- 56	No	INC	6	0:00	5:44
150	RT	Planned Transmission Outage	PG&E	Humboldt	11/30/2017	28- 90	No	DEC	19	5:15	23:59
151	RT	Planned Transmission Outage	PG&E	Humboldt	11/30/2017	32- 90	No	INC	19	5:15	23:59
152	RT	Planned Transmission Outage	PG&E	Humboldt	12/1/2017	45- 77	No	INC	6	0:00	5:59
153	RT	Planned Transmission Outage	PG&E	N/A	11/6/2017	43- 45	No	INC	15	9:13	23:59
154	RT	Planned Transmission Outage	PG&E	N/A	11/7/2017	43	No	INC	16	0:00	15:59
155	RT	Planned Transmission Outage	PG&E	N/A	11/9/2017	32	No	INC	14	6:00	19:44
156	RT	Planned Transmission Outage	PG&E	N/A	11/10/2017	32	No	INC	14	6:00	19:44
157	RT	Planned Transmission Outage	PG&E	N/A	11/11/2017	32	No	INC	12	6:00	17:44
158	RT	Planned Transmission Outage	PG&E	Stockton	11/7/2017	67	No	INC	3	17:35	19:44
159	RT	Planned Transmission Outage	PG&E	Stockton	11/13/2017	96	No	INC	7	8:00	14:59
160	RT	Planned Transmission Outage	PG&E	Stockton	11/14/2017	191	No	INC	7	8:00	14:59
161	RT	Planned Transmission Outage	SCE	Big Creek-Ventura	11/7/2017	3	No	INC	2	17:40	19:34
162	RT	Planned Transmission Outage	SDG&E	San Diego-IV	11/8/2017	63	No	INC	8	11:35	18:59
163	RT	Planned Transmission Outage	SDG&E	San Diego-IV	11/9/2017	37- 75	No	INC	5	6:55	11:44
164	RT	Planned Transmission Outage	SDG&E	San Diego-IV	11/10/2017	200	No	DEC	4	6:00	9:59
165	RT	Planned Transmission Outage	SDG&E	San Diego-IV	11/10/2017	200	No	INC	4	6:00	9:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
166	RT	Planned Transmission Outage	SDG&E	San Diego-IV	11/11/2017	20-1150	No	INC	17	5:00	21:59
167	RT	Planned Transmission Outage	SDG&E	San Diego-IV	11/16/2017	21	No	INC	3	11:45	13:59
168	RT	Planned Transmission Outage	SDG&E	San Diego-IV	11/17/2017	68	No	INC	14	6:30	19:59
169	RT	Planned Transmission Outage	SDG&E	San Diego-IV	11/18/2017	315	No	DEC	5	5:35	9:59
170	RT	Planned Transmission Outage	SDG&E	San Diego-IV	11/18/2017	155-751	No	INC	11	3:00	13:59
171	RT	Planned Transmission Outage	SDG&E	San Diego-IV	11/20/2017	20- 68	No	INC	11	7:00	17:59
172	RT	Software Limitation	PG&E	Bay Area	11/2/2017	0	No	DEC	1	17:00	17:29
173	RT	Software Limitation	PG&E	Bay Area	11/6/2017	0	No	INC	1	0:15	1:14
174	RT	Software Limitation	PG&E	Bay Area	11/12/2017	562	No	INC	1	18:20	19:19
175	RT	Software Limitation	PG&E	Fresno	11/8/2017	0	No	DEC	6	18:35	23:59
176	RT	Software Limitation	PG&E	Fresno	11/8/2017	0	No	INC	6	18:35	23:59
177	RT	Software Limitation	PG&E	Fresno	11/24/2017	-312	No	DEC	1	8:15	9:14
178	RT	Software Limitation	PG&E	Humboldt	11/20/2017	32	No	DEC	5	15:40	19:59
179	RT	Software Limitation	PG&E	Humboldt	11/20/2017	32	No	INC	5	15:40	19:59
180	RT	Software Limitation	PG&E	Humboldt	11/24/2017	42	No	INC	1	17:25	18:29
181	RT	Software Limitation	PG&E	Humboldt	11/26/2017	14- 42	No	DEC	2	17:00	18:59
182	RT	Software Limitation	PG&E	Humboldt	11/28/2017	32	No	INC	2	22:00	23:59
183	RT	Software Limitation	PG&E	Humboldt	11/29/2017	16	No	INC	1	1:45	2:14
184	RT	Software Limitation	PG&E	Sierra	11/17/2017	0	No	INC	5	9:30	14:29
185	RT	Software Limitation	SCE	Big Creek-Ventura	11/4/2017	-177	No	INC	2	12:10	13:59
186	RT	Software Limitation	SCE	LA Basin	11/8/2017	22	No	INC	1	19:30	20:04
187	RT	Software Limitation	SCE	LA Basin	11/15/2017	0	No	DEC	1	16:15	17:14
188	RT	Software Limitation	SCE	LA Basin	11/21/2017	0	No	DEC	6	1:00	6:59
189	RT	Software Limitation	SCE	N/A	11/2/2017	495	No	INC	4	12:15	15:59
190	RT	Software Limitation	SDG&E	San Diego-IV	11/2/2017	0	No	INC	1	15:00	15:29
191	RT	Unit Testing	PG&E	Bay Area	11/6/2017	150	No	INC	3	21:35	23:59

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
192	RT	Unit Testing	PG&E	Bay Area	11/7/2017	140-150	Yes	INC	24	0:00	23:59
193	RT	Unit Testing	PG&E	Bay Area	11/8/2017	140	No	INC	4	0:00	3:14
194	RT	Unit Testing	PG&E	Bay Area	11/16/2017	195-390	Yes	INC	10	14:00	23:59
195	RT	Unit Testing	PG&E	Bay Area	11/17/2017	200	No	INC	10	14:00	23:59
196	RT	Unit Testing	PG&E	Bay Area	11/18/2017	200	Yes	INC	2	0:00	1:59
197	RT	Unit Testing	PG&E	Bay Area	11/21/2017	148	No	INC	1	3:09	3:59
198	RT	Unit Testing	PG&E	Fresno	11/1/2017	96	No	INC	4	4:10	7:19
199	RT	Unit Testing	PG&E	Fresno	11/12/2017	300	Yes	INC	4	12:30	15:59
200	RT	Unit Testing	PG&E	Fresno	11/16/2017	-308	No	DEC	2	0:45	2:44
201	RT	Unit Testing	PG&E	N/A	11/3/2017	47- 94	No	INC	1	19:41	20:24
202	RT	Unit Testing	PG&E	N/A	11/9/2017	46	No	INC	1	19:30	19:54
203	RT	Unit Testing	SCE	LA Basin	11/2/2017	90- 180	No	INC	2	19:05	20:59
204	RT	Unit Testing	SCE	LA Basin	11/8/2017	22	No	INC	1	19:00	19:29
205	RT	Unit Testing	SCE	LA Basin	11/9/2017	16	No	INC	1	18:20	18:49
206	RT	Unit Testing	SCE	LA Basin	11/29/2017	72	Yes	INC	1	11:45	12:44
207	RT	Unit Testing	SCE	N/A	11/14/2017	240	No	DEC	2	15:35	16:59
208	RT	Unit Testing	SCE	N/A	11/14/2017	410	No	INC	7	8:20	14:59
209	RT	Unplanned Outage	SCE	LA Basin	11/6/2017	70	No	INC	8	16:45	23:59
210	RT	Unplanned Outage	SCE	LA Basin	11/7/2017	25- 50	Yes	INC	24	0:00	23:59
211	RT	Voltage Support	PG&E	Fresno	11/20/2017	83	No	INC	3	5:00	7:59
212	RT	Voltage Support	PG&E	Fresno	11/21/2017	-315	No	DEC	2	4:10	5:59
213	RT	Voltage Support	PG&E	Fresno	11/23/2017	-315	No	DEC	8	0:02	7:59
214	RT	Voltage Support	PG&E	Fresno	11/25/2017	-308	No	DEC	3	5:10	7:59
215	RT	Voltage Support	PG&E	Fresno	11/25/2017	83	No	INC	2	22:30	23:59
216	RT	Voltage Support	PG&E	Fresno	11/26/2017	-312--308	No	DEC	22	2:30	23:59
217	RT	Voltage Support	PG&E	Fresno	11/26/2017	83- 166	Yes	INC	3	0:00	2:29

Number	Market Type	Reason	Location	Local Reliability Area	Trade Date	MW	Commitment	INC_DEC	Hours	Begin Time	End Time
218	RT	Voltage Support	PG&E	Fresno	11/27/2017	-312	No	DEC	6	0:00	5:44
219	RT	Voltage Support	PG&E	Sierra	11/5/2017	40	No	INC	5	1:05	5:59
220	RT	Voltage Support	PG&E	Sierra	11/6/2017	20	No	INC	5	1:09	5:59

Appendix A: Explanation by Example

All examples listed below are based on fictitious data.

Example 1: Exceptional Dispatch Instructions Prior to DAM

In this fictitious example, the CAISO issued an exceptional dispatch instruction for resource A to be committed at its physical minimum (Pmin) of 50 MW from hours ending 5 through 10 for a generation procedure 7630. Similarly, the CAISO issued additional instructions to resources B and C for the same reason as shown in Table 2. Generally, exceptional dispatches prior to the day-ahead market are commitments to minimum load. Here the dispatch levels are all at minimum load.

Table 2: Instructions Prior to Day-Ahead Market

Date	Market	Resource	Location	Local Reliability Area (LRA)	Begin Time	End Time	Dispatch Level (MW)	Reason
01-Jul-09	DA	A	SCE	LA BASIN	05:00	10:00	50	7630
01-Jul-09	DA	B	SCE	LA BASIN	08:00	20:00	30	7630
01-Jul-09	DA	C	SCE	LA BASIN	09:00	23:00	20	7630

This data is summarized as shown in Table 3, which is the prescribed format specified in the FERC order on September 02, 2009. This summary classifies the data by reason, resource location, local reliability area, and trade date. The MW column in Table 3 is the range of MW; in this case the minimum instruction MW is 20 MW for resource C which occurs from hours ending 21 through 23. The maximum instruction occurs in hour ending 10. In this hour resource A is committed at 50 MW, resource B is committed at 30 MW and resource C is committed at 20 MW. This adds up to 100 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. Commitments are broken out separately from energy dispatches. In the day-ahead, however the exceptional dispatches are nearly always just commitments, as in this example. The Begin Time column shows hour ending 5 as this was the hour ending for first dispatch of the day, and the End Time column shows hour ending 23, as this was the hour with last dispatch. It is also possible that there might be hours between the begin time and the end time where there might not be exceptional dispatch instructions for the given reason, meaning that the range between the begin time and end time can include null hours with no dispatch.

Table 3: FERC Summary of Instructions Prior to DAM

Number	Market Type	Reason	Location	Local Reliability Area (LRA)	Trade Date	MW	Commitment	INC/DEC	Hour	Begin Time	End Time
1	DA	7630	SCE	LA Basin	1-Jul-09	20-100	Yes	N/A	19	05:00	23:00

Example 2: Incremental Exceptional Dispatch Instructions in RTM

In this fictitious example, the CAISO issued an exceptional dispatch instruction to resource A to be committed at its Pmin of 30 MW from hours ending 7 through 11 after completion of the day-ahead market for the transmission procedure 7110. This resource had no day-ahead award in those hours. The CAISO issued another exceptional dispatch instruction to resource B, to be dispatched at 40 MW from hours ending 8 through 9 in real-time for the transmission procedure 7110. This resource had a day-ahead schedule of 20 MW from the day-ahead market, which implies that this exceptional dispatch instruction was an incremental instruction and the exceptional dispatch MW was 20 MW. Similarly, the details of exceptional dispatch (ED) instruction for resource C are shown in Table 4.

Table 4: Incremental Exceptional Dispatch Instructions in RTM

Date	Market	Resource	Location	Local Reliability Area (LRA)	Begin Time	End Time	Dispatch Level (MW)	Day-Ahead Award (MW)	Commitment	INC/DEC	ED (MW)	Reason
01-Jul-09	RT	A	PG&E	Humboldt	06:00	11:00	30	0	Yes	INC	30	7110
01-Jul-09	RT	B	PG&E	Humboldt	07:00	09:00	40	20	No	INC	20	7110
01-Jul-09	RT	C	PG&E	Humboldt	12:00	15:00	50	50	No	INC	0	7110
01-Jul-09	RT	C	PG&E	Humboldt	16:00	20:00	50	40	No	INC	10	7110

This data is summarized as shown in Table 5 and is classified by reason, resource location, local reliability area, and trade date. The MW column in Table 5 is the range of MW; in this case the minimum instruction MW is 0 MW for resource C which occurs from hours ending 13 through 15. The maximum instruction occurs in hours ending 8 & 9, as during these two hours both resources A and B have an ED MW of 30MW and 20MW, respectively. This adds up to 50 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time. This column shows a commitment if there was a single commitment in the entire interval of exceptional dispatch. The Begin Time column shows the time of the first dispatch of the day. This is a time not a range. Similarly the End Time column shows a time and not a range. Exceptional dispatches occurred between these two times. Since there was a commitment between the begin time and end time then the Commitment column displays yes for the summary. Similarly, the INC/DEC column shows an INC as there was an incremental dispatch between the begin time and end time. As mentioned in the previous example it is possible that there might be hours between the begin time and end time where there were no exceptional dispatch instructions for the given reason.

Table 5: FERC Summary of ED Instructions in RTM

Number	Market Type	Reason	Location	Local Reliability Area (LRA)	Trade Date	MW	Commitment	INC/DEC	Hour	Begin Time	End Time
1	RT	7110	PG&E	Humboldt	1-Jul-09	0-50	Yes	INC	15	06:00	20:00

Example 3: Decremental Exceptional Dispatch Instructions in RTM

This example highlights decremental exceptional dispatch instructions in the real-time market. In this fictitious example the CAISO issued an exceptional dispatch instruction to resource A to be committed at its Pmin of 20 MW from hours ending 15 through 20 after completion of the day-ahead market for the transmission procedure 7430. The CAISO issued additional exceptional dispatch instructions for resources B and C; details of those instructions are shown in Table 6.

Table 6: Decremental Exceptional Dispatch Instructions in RTM

Date	Market Type	Resource	Location	Local Reliability Area (LRA)	Begin Time	End Time	Dispatch Level (MW)	Day-Ahead Award (MW)	Commitment	INC/DEC	ED (MW)	Reason
01-Jul-09	RT	A	PG&E	Fresno	15:00	20:00	20	0	Yes	INC	20	7430
01-Jul-09	RT	B	PG&E	Fresno	07:00	09:00	40	60	No	DEC	20	7430
01-Jul-09	RT	C	PG&E	Fresno	10:00	14:00	40	50	No	DEC	10	7430

This data is summarized according to FERC convention as shown in Table 7. This summary classifies the data by reason, resource location, local reliability area, and trade date. Please note that inc and dec are broken out separately. The inc entry is self-explanatory and similar to the previous example. Regarding the dec entry the MW column is the range of MW; in this case the minimum dec instruction is 10 MW (actually -10MW as it is a dec) for resource C which occurs from hours ending 10 through 14. The maximum instruction occurs from hours ending 7 through 9, when resource B was issued a dec instruction of 20 MW. The MW column shows the minimum and maximum of the overlaps of all the exceptional dispatch instructions. The Commitment column shows whether a resource was committed between the begin time and end time.

Table 7: FERC Summary of Decremental ED Instructions in RTM

Number	Market Type	Reason	Location	Local Reliability Area (LRA)	Trade Date	MW	Commitment	INC/DEC	Hour	Begin Time	End Time
1	RT	7430	PG&E	Fresno	1-Jul-09	20	Yes	INC	6	15:00	20:00
1	RT	7430	PG&E	Fresno	1-Jul-09	10-20	Yes	DEC	8	07:00	14:00